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AUTHOR:

FRANKLIN, CHRISTINE

TITLE:

EPISTEMOLOGY FOR
THE LOGICIAN

PLACE:

HEIDELBERG

DATE:

WINTER

Master Negative #

93-81223-17

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BIBLIOGRAPHIC MICROFORM TARGET

Original Material as Filmed - Existing Bibliographic Record

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v.2

Franklin, Christine (Ladd) 1847-1930.
Epistemology for the logician. Heidelberg,
Winter, 1908.
cover title, p. 664-670. 24^{cm} in 25¹/₂^{cm}

Sonderabdruck aus den Verhandlungen des III.
Internationalen kongresses für philosophie, Hei-
delberg, 1908.
Volume of pamphlets.

Restrictions on Use:

TECHNICAL MICROFORM DATA

FILM SIZE: 35 mm

REDUCTION RATIO: 1/8

IMAGE PLACEMENT: IA IIA IB IIB

DATE FILMED: 3/30/93

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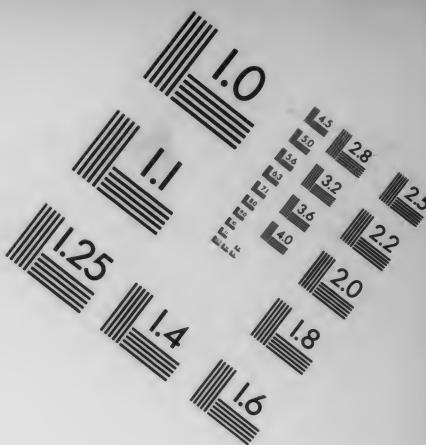
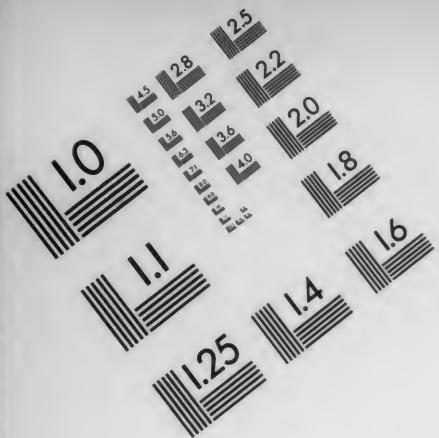


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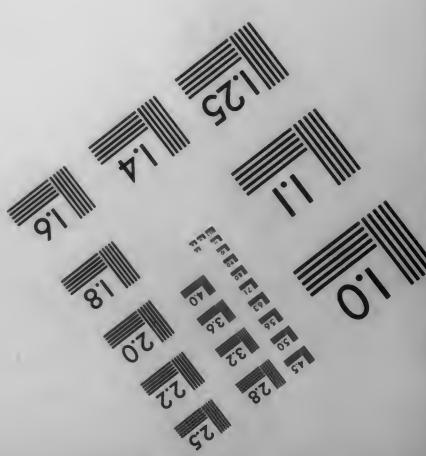
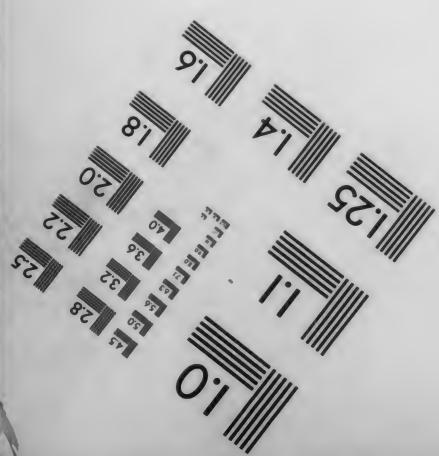
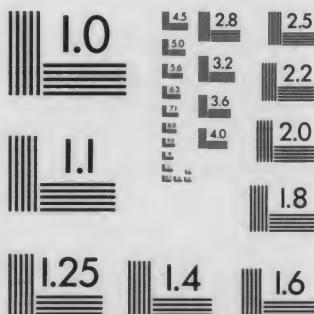
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EPISTEMOLOGY FOR THE LOGICIAN

By CHRISTINE LADD-FRANKLIN

No 12

Sonderabdruck
aus den Verhandlungen des III. Internationalen Kon-
gresses für Philosophie Heidelberg 1908

Verlag von Carl Winter's Universitätsbuchhandlung Heidelberg



EPISTEMOLOGY FOR THE LOGICIAN.

By CHRISTINE LADD-FRANKLIN,
Johns Hopkins University, Baltimore.

I.

Philosophy among the Sciences.

It is an old reproach to philosophy that it fails to make progress, that it is always being done over again, that nothing remains as established, accepted, doctrine for future generations to build upon, but that fresh attempts are always being made to construct it differently from the beginning. The hallmark of science, on the other hand, is that its acquisitions are cumulative from generation to generation, — what is established remains, — its procedure is by adding solid stone to stone, — its results command assent, and in consequence command respect. This sad plight of philosophers (a reproach which they have various, but insufficient, means of explaining away) has been, as it happens, particularly accentuated in August of this very year. Hermann Cohn has drawn attention to the fact that the International Congress of Historical Sciences, which has now met in Berlin, found no room for philosophy upon its program, although it takes in literature, art, and the natural sciences, as well as the plain history of human events. This, indeed, is going far, — if philosophy could not (as indeed it has no right to) appear as science, one might at least expect that it would have some claim to appear as literature or as art. But that the framers of the Berlin Congress should regard it as non-existent among branches of learning is a fact of such a startling nature, it brings so definitely to a focus what everybody knows to be the attitude of the scientifically disposed towards philosophy, that it may well furnish ground for reflection, and perhaps for the starting up of a concerted effort towards a better, a less to-be-blushed-for, state of things.

The distinguishing mark of philosophy, hitherto, has been that "everything goes." In other branches of learning, absurd hypothesis and creed are quickly weeded out by ruthless criticism. But in the domain of metaphysics, there seems to be an unwritten law to the effect that, if once a system, then always a system, — that no matter how feeble a doctrine may be, no amount of criticism can lay its head low forever, that it must always continue to exist, and to be battled against by fresh philosophers unceasingly. In science, wrong doctrines, once disproved, are disproved forever; there are no "systems", save temporarily and upon the outskirts — soon to be put to the test of sharp and vigorous discussion. *Science* consists of *knowledge*, — not, it is true, a sort of knowledge that is destined never to be overthrown, but at least a sort which represents, at a given time, the best result of the combined effort of all scientists, — hypothetical always, according to the present view of the logician, but nevertheless of a high degree of probability, and only to be displaced by wider and more profound experience.

Science itself, it is true, has not always occupied this proud position, in which progress is continuous, and theories are not born but to be shattered. From its remote beginnings in the time of Hammurabi up to the comparatively very recent days of Bacon and Galileo, it had little more to boast of, in the way of sure conquest, than philosophy itself. It is the discovery of strict principles of method — it is, in other words, the aid of the logician as such (though he might happen to be a scientist also) — that brought it suddenly into a position such that its progress has been, for the last two centuries, by leaps and bounds. Has not philosophy something to learn from this? It may well be that it is a total lack of scientific method which is responsible for the condition in which philosophy finds herself to-day. It may well be that a thorough study of doctrines regarding truth which prevail (more or less consciously) among men of the scientific turn of mind would do more than they can now believe possible to put the philosophers on a safer track.

Without going farther into the question of method, it may be insisted upon (as I have already indicated) that there is one criterion which science considers indispensable, and which philosophy, much to its loss, has hitherto been content to go

without, — viz. the ability to secure *common assent* among those (they may be few in number) who are in a condition to form well-grounded judgments in a given domain — to obtain (to use a happy phrase which deserves to become classic) “the consensus of the competent.” This it is in which philosophy is conspicuously lacking, — and to a much greater degree indeed (owing to unending ambiguity of phrase) than always appears on the surface. It may be that a common standing-ground, however small, is unattainable by philosophers, but the making out of that fact would itself be a gain for knowledge. But if there is a common groundwork between philosophical systems, with claim to truth, it were well that this were ascertained as soon as possible.

Or, shall we perhaps be forced to admit, after all, that philosophy is not a branch of knowledge, that all philosophy is, like the so-called philosophy of Nietzsche, merely a department of literature, or of art, that it makes no claim to acceptance but only to enjoyment, — that metaphysics, in a word, is poetry? Lotze, indeed, distinctly confesses not only that it was his artistic and ethical needs that made him take to philosophy, but also that they form the basis of his system, — and there are philosophers to-day who pursue philosophy not from love of truth, but with a distinct *parti pris*, — from the necessity they feel themselves under of producing a speculative system from which they can deduce the possibility, e. g., of a plainly revealed religion. But as we fear the Greeks the more, the more important the gift they bring, so a happy issue to a philosophy (even so vast an issue as this) gives, if anything, an antecedent probability against it, — or, at least, it is a thing which causes us to be the more on our guard, intellectually; all such considerations take philosophy outside the region of plain truth.

This is a crisis which calls for action, — but, also, the present moment permits it: As other congresses appoint their commissions for the prolonged study of questions of peculiar difficulty, I venture to suggest that this congress should appoint a commission, whose task should be simply to propose some few fundamental principles so well founded that they may be handed over to the outsider as at least a program — a platform — which may have some chance to command the consensus of the competent among the philosophers, and to meet

the severe tests for validity which are matter of course among the logicians and the scientists. “The competent” we have here before us: if an effort is ever to be made towards the founding of a scientific philosophical doctrine, no better time could be found for making a beginning than the present.

The members of this commission should be selected not so much for their proved prolificness as philosophers (for their task would be, at least in part, one of selection) as for their powers of logical acumen, for their keen scent for the detection of fallacy. All should be excluded, for instance, who had not, in the blood, an ingrained incapacity for committing a wrong conversion (an error not so uncommon as one might suppose), — all who believe that the syllogism can be proved by the laws of thought, or that all reasoning is syllogistic, — all who do not know that consistency, though an *indispensable*, is not a *sufficient* test for truth. It should, on the other hand, be plentifully furnished with members of that keen band of mathematical logicians who have lately been doing such heroic work in digging down into the foundations of logic and of mathematics. With a commission thus carefully constructed, I believe that it would yet be possible to have a “philosophy among the sciences.”

II.

The Doctrine of Histurgy.

Faute de mieux, I venture to offer a skeleton sketch of what I think such a common doctrine might consist of, — and in order to hold it together, and, in particular, to separate it out from pragmatism (its nearest foe), I give it a name (the reason for which will appear in a moment) — the name *Histurgy*.

Such a skeleton philosophy as I have in mind (all that the logician and the scientist would have digestion for) should consist, I take it, of the following doctrines:

1. A theory of reality, — the theory (already widespread among all philosophers later than Kant) that the existence of an external world is hypothetical only — an hypothesis of immense convenience and of much probability indeed, but belonging only with beliefs of a much less degree of reality than that which attaches to immediate experience.

2. A reformed psychology. Since philosophy is necessarily based upon what the not further analyzable constituents of consciousness are, it is of the last importance that these constituents should be correctly made out. To this end the methods of genetic logic, among others, will contribute much.

We need a theory of truth; and, since truth is expressed in the form of judgments, we need (as a necessary preliminary):

3. A theory of the judgment. The latter (a topic on which I believe that contemporary opinion has gone much astray) will take this form:

Among consciousness-constituents which are held together in the one-time-one-place relation, some occur together so universally that their concomitance attracts no attention¹ — (such an ensemble goes by the name of *concept*); others are in some way striking, unexpected, demanding emphasis, — an asserted, emphasized relation between concepts of this sort is a *judgment*.

4. *When are propositions true and when are they not?* Those who have discussed this question have failed to notice the immense difference, in this connection, between the particular and the universal statement of truth. The particular is an *immediate experience*, not further analyzable, not capable of explanation, — one of the original *data* of consciousness. When I say "some *a* is *b*", I say that, for instance (if *a* and *b* stand for *acid* and *blue*), the experience *acid* is (at least once) *concurrent* with the experience *blue*. This experience of *concurrency* is as much immediate, unanalyzable (and also as independent of the existence of an external world and consequently non-representative of the external or the objective) as is the experience *acid* or the experience *blue*. The one-time-one-place relation is, it is true, a temporal-spatial relation (or temporal only, if the terms are "subjective"), but that gives it no claim to be treated in mystical, metaphysical, fashion. Particular truths do not need to be, nor can they be, proved, or established — they are simply *experienced*.

With the universal proposition, we enter upon different ground. The universal proposition is a thing of double import; — on the one hand it is a simple summing up of past ex-

¹ That it "goes without saying".

perience, a simple enumeration of particulars; — and some of our most fundamental truths have no other meaning than this: "whatever has shape has color, whatever has color has shape" — this is based upon a simple enumeration of instances, in bad repute as this method of getting at truth is among the older logicians. But truths like this we should never have taken the trouble to preserve — they are uninteresting and non-valuable. What gives significance and value to truths is that they permit of interesting *prediction*. Concurrences occur again, and there are such that, given the first term of the relation, the second one will be insured. To test the validity of such a proposition, we take at hazard any number of instances of the occurrence of *a* and we note whether *b* occurs also, — but it is essential that the instances should be chosen *at hazard*. (This is Peirce's theory of probable induction — a far more valuable contribution, I believe, to the theory of knowledge than his doctrine of pragmatism). Any principle of selection invalidates the process, for the ground upon which the selection is made may itself be an essential part of the antecedent, and so invalidate the generality of the proposition. So instances already experienced have not the force of those yet to be produced or discovered, for they may have some unnoticed common element which interferes with their supposed generality. Hence the value of experiment in the testing of truth.

Isolated truths are tested by instances of their occurrence. But most truths are not isolated. Knowledge is a net-work; truths "hang together." The two terms of an asserted relation may enter severally into many other relations, and some such relation-pairs may chance to constitute the premises of valid syllogisms — that is, they may enable us to eliminate the common term and to state directly the relation which has already been affirmed (which is all that syllogism is). The conclusion thus obtained may itself be subjected to the test of instances, and in this way confirmatory probable evidence obtained for both the premises (or absolute condemnatory evidence of one if the contradictory occurs). Pragmatism is wrong in saying that consequences are the test for truth, and this for two reasons. In the first place, what shall convince us that the consequence itself is "true"? For that we can only

apply the test of instances, unless the process of testing consequences is to go on *ad infinitum*, and in the vast majority of cases it is as easy to get instances of the proposition itself as it is to get instances of its consequences. Pragmatism, in proposing its test for truth, has in view only a very limited class of truths (such, for instance, as that God exists), and not that great body of truth which constitutes knowledge. Take that most certain of all truths, "terrestrial gravitation occurs", — it is not by its *consequences* that we judge it (true though they all may be), but by its immediate and innumerable *instances*.

In the second place, the truth of its *consequences*, while (as I have just said) *unnecessary* (or dispensable) for a large number of propositions, is *insufficient* for all. There are certain truths indeed (or what we think to be such) in regard which instances are inaccessible to us, — for these we have only consequences to fall back upon. But we have a special name for truths of this sort — we call them hypotheses, and, if they become more probable, theories; — to erect this very limited class of our beliefs into the type of *truth* in general is to go very far astray from the methods of science, that is to say, from those methods which are destined to command assent.

I conclude then that pragmatism is not only immoral but also untrue. What I would substitute for it is that knowledge is an net-work, that truths hang together, and that it is the confirmation (by instances) of the countless cross-connections (conclusions of syllogisms) which exist between our "items of knowledge" that give us the immense confidence we feel in its validity as a whole, — a confidence far greater than *induction in isolated cases* (our only other method) could ever give us. The figure is that of the banyan tree: by means of an enormous interlacement of branches, and by sending down frequently supports which dig into the solid ground of fact, the whole vast structure is kept stable. I call this the doctrine of Histurgy, by which I mean a work of weaving — a woven tissue.

(This doctrine will be developed farther in another place.)

